

AMENDMENTS TO CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled) Method for enabling a user to more
8. (Currently Amended) The method according to claim 7 Method for enabling a user to edit an XML document using an XML document editor to add or delete an element into a working document and to convert said working document into an XML document file; comprising the step of enabling said XML document editor to automatically generate, in relation to two consecutive elements z_i and z_{i+1} , of said working document, a list of candidate third elements z to be provided to a user; wherein said third elements z in said list are selected such that relations between elements z_i and z and between elements z and z_{i+1} , comply with said DTD after said element z is inserted between elements z_i and z_{i+1} , said list enabling the user to select any of the

candidate third elements z and add them to the working document without affecting DTD compliance of the working document, wherein whether the relation between two consecutive elements complies with said DTD is determined according to the following rule:

suppose G is Glushkov Automaton of said document, z_i is a state in G , $1 \leq i \leq p-1$, $[p \ N]$ $p \in \mathbb{N}$, $\Sigma = \{z_1, z_2, \dots, z_p\}$ is a sequence of states in G where $z_1 = s$, s is start state of G , $z_p = f$, f is final state of G ;

if $z_{i+1} \in \text{reachable}(z_i)$, wherein $\text{reachable}(z_i)$ denote the set of states in G reachable from state z_i ,

then the relation between z_i and z_{i+1} is determined compliant with DTD of said document.

9. (Currently Amended) The method according to claim-7_8, wherein a cell C to include said candidate third elements z is generated according to the following rule and displayed as a list:

suppose $(z_i, z_{i+1}) \in H$, H denotes the set of edges in G , G is Glushkov Automaton of regular expression E corresponding to an element of said working document;

further suppose Σ is a set to include states corresponding to all elements of G , $A(E1)$ is the set of states in subexpression $E1$ to E , $f\text{-reachable}(z_i)$ denotes the set of states in G reachable from z_i through forward edges;

if $z_{i+1} \in f\text{-reachable}(z_i)$, then let $C = \{z \in \Sigma \mid z \in f\text{-reachable}(z_i) \text{ and } z_{i+1} \in f\text{-reachable}(z)\}$;

if $z_{i+1} \notin f\text{-reachable}(z_i)$, then let $E1^*$ be the smallest iteration subexpression of E that covers both z_i and z_{i+1} , $C = \{z \in A(E1) \mid z \in f\text{-reachable}(z_i) \text{ or } z_{i+1} \in f\text{-reachable}(z)\}$.

10. (Currently Amended) The method according to claim-7_8, wherein a cell C to include said candidate third ~~element~~ elements z is generated according to the following rule and displayed as a list:

suppose $(z_i, z_{i+1}) \in H$, H denotes the set of edges in G , G is Glushkov Automaton of regular expression E corresponding to an element of said working document;

further suppose Σ is a set to include states corresponding to all elements of G , $A(E1)$ is the set of states in subexpression $E1$ to E , $f\text{-reachable}(z_i)$ denotes the set of states in G reachable from z_i through forward edges;

if (z_i, z_{i+1}) is a forward edge, let $C = \{ z \in \Sigma \mid z \in f\text{-reachable}(z_i) \text{ and } z_{i+1} \in f\text{-reachable}(z) \}$ and:

if $z_i \in \text{last}(E1^*)$ for some iteration subexpression $E1^*$ of E and $E1$ is the largest one, then let $C1 = \{ z \in A(E1) \mid z_{i+1} \in f\text{-reachable}(z) \}$, $C = C \cup C1$;

if $z_{i+1} \in \text{first}(E2^*)$ for some iteration subexpression $E2^*$ of E and $E2$ is the largest one, then let $C2 = \{ z \in A(E2) \mid z \in f\text{-reachable}(z_i) \}$ and $C = C \cup C2$;

if (z_i, z_{i+1}) is a backward edge, then let $C = A(E3)$, wherein $E3^*$ is the largest iteration subexpression of E satisfying $z_i \in \text{last}(E3)$ and $z_{i+1} \in \text{first}(E3)$.

11. (Currently Amended) The method according to claim 7, further comprising automatically generating a required element between element pair z_i and z and element pair z and z_{i+1} after said third element z is inserted between element pair z_i and z_{i+1} , such that said working document is effective; wherein said requirement comprises articulation points between elements z_i and z (and z and z_{i+1}) in Glushkov Automaton G ; i.e., states through which all paths between z_i and z (and z and z_{i+1}) shall pass.

12. (Currently Amended) The method according to claim 7, further comprising automatically generating an element slot allowing user to add elements into said document, if no required element between element pair z_i and z and element pair z and z_{i+1} is found after said third element z is inserted between element pair z_i and z_{i+1} and if $(z_i, z) \notin H((z, z_{i+1}) \notin H)$, wherein H denotes set of edges in G ; and wherein said requirement comprises articulation points between elements z_i and z (and z and z_{i+1}) in Glushkov Automaton G ; i.e., states through which all paths between z_i and z (and z and z_{i+1}) shall pass.

13. (Canceled)

14. (Canceled)

15. (Canceled)

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16. (Canceled)

17. (Canceled)

18. (Canceled)